

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN THE MATTER OF: Tae Wan KIM et al
SERIAL NO: 10/553,647
FILED: October 14, 2005
TITLE: RESIN COMPOSITION FOR MOLD USED IN
FORMING MICROPATTERN, AND...
GROUP: 4151
CONFIRMATION NO: 5573
EXAMINER: Ryan M. Ochylski

PRELIMINARY AMENDMENT

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

SIR:

This Preliminary Amendment is being filed concurrently with a Request for Continued Examination ("RCE") of the above-identified application in response to the Advisory Action dated July 6, 2009, for which a two-month extension of time is requested to respond to the Final Action mailed April 24, 2009.

The Commissioner is authorized to charge any fees required by this paper and in the prosecution of this application to Deposit Account No. 504581.

Please amend the present application as follows:

IN THE CLAIMS

The following is a listing of the claims in the application with claim 1 shown as amended and with claim 7 cancelled:

LISTING OF CLAIMS

1. (currently amended) An organic mold for transferring micropatterns to a substrate, the organic mold having a reverse pattern face of the face of said micropatterns and being fabricated from a resin composition comprising:

(A) 40 to 90 parts by weight of an active energy curable urethane- based oligomer having a reactive group selected from the group consisting of (meth)acrylate, vinylether, aryether, and a combination thereof;

(B) 10 to 60 parts by weight of a monomer reactive with the urethane- based oligomer, having a reactive group selected from the group consisting of (meth)acrylate, vinylether, aryether, and a combination thereof;

(C) 0.01 to 200 parts by weight of a silicone or fluorine containing compound, based on 100 parts of the sum of the components (A) and (B); and

(D) 0.1 to 10 parts by weight of a photoinitiator, based on 100 parts of the sum of the components (A), (B) and (C) .

wherein the silicone- or fluorine-containing compound is at least one component selected from:

(i) a silicone-containing reactive monomer or oligomer selected from the group consisting of a silicone-containing vinyl derivative, silicone-containing (meth)acrylate, (meth)acryloxy-containing organosiloxane silicone polyacrylate, and a mixture thereof;

(ii) a fluorine-containing reactive monomer or oligomer selected from the group consisting of a fluoroalkyl-containing vinyl derivative, fluoroalkyl-containing (meth)acrylate, fluorine polyacrylate, and a mixture thereof; and

(iii) a combination of (i) and (ii).

2. (previously amended) The organic mold according to claim 1, wherein the active energy curable urethane-based oligomer used in the resin composition is selected from the group consisting of linear aliphatic, cycloaliphatic and aromatic urethane-based oligomers having at least two reactive groups, and a mixture thereof.

3. (previously amended) The organic mold according to claim 1, wherein the resin composition further comprises at least one reactive oligomer selected from the group consisting of a (meth)acrylated polyester, (meth)acrylated polyether, (meth)acrylated epoxy, (meth)acrylated polycarbonate, (meth)acrylated butadiene,

and a mixture thereof, as a partial substituent of Component A.

4. (previously amended) The organic mold according to claim 1, wherein the (meth)acrylate used as Component B in the resin composition is selected from the group consisting of isobomyl acrylate, 1,6- hexanediol acrylate, triethyleneglycol di(meth)acrylate, trimethylol propane triacrylate, tetraethyleneglycol di(meth)acrylate, 1,3-butanediol diacrylate, 1,4- butanediol diacrylate, diethyleneglycol diacrylate, neopentylglycol diacrylate, neopentylglycol di(meth)acrylate, polyethyleneglycol di(meth)acrylate pentaerythritol triacrylate, dipentaerythritol (hydroxy) pentaacrylate, alkoxyated tetraacrylate, octadecyl acrylate, isodecyl acrylate, lauryl acrylate, stearyl acrylate, behenyl acrylate, styrenic monomer, and a mixture thereof.

5. (previously amended) The organic mold according to claim 1, wherein the vinyl ether used as Component B in the resin composition is selected from the group consisting of cyclohexyl vinyl ether, 2-ethylhexyl vinyl ether, dodecyl vinyl ether, 1,4-butanediol divinyl ether, 1,4 hexanediol divinyl ether, diethylene glycol divinyl ether, ethyleneglycol butyl vinyl ether, ethyleneglycol divinyl ether, triethyleneglycol methylvinyl ether triethyleneglycol divinyl ether, trimethylol propane trivinyl ether, 1,4 cyclohexane dimethanol divinyl ether, and a mixture thereof.

6. (previously amended) The organic mold according to claim 1, wherein the aryl ether used as Component B in the resin composition is selected from the group consisting of aryl propyl ether, aryl butyl ether, pentaerythritol triaryl ether, and a mixture thereof.

7. (Cancelled).

8. (previously amended) The organic mold according to claim 1, wherein the photoinitiator used in the resin composition is a free radical initiator selected from the group consisting of benzyl ketals, benzoin ethers, acetophenone derivatives, ketoxime ethers, benzophenone, benzo and thioxantone compounds, and mixtures thereof, and a cationic initiator selected from the group consisting of onium salts, ferrocenium salts, diazonium salts, and mixtures thereof.

9. (previously amended) A method for fabricating an organic mold, which comprises coating or casting a resin composition for the organic mold on a pattern face of a mastermold, placing a support on the resin layer, irradiating the resulting laminate with an active energy ray to preliminarily cure the resin composition, lifting off the organic mold having a reverse pattern face to that of the mastermold and integrally formed with the support from the mastermold, and completely curing the organic mold wherein the resin composition comprises:

(A) 40 to 90 parts by weight of an active energy curable urethane- based oligomer having a reactive group selected from the group consisting of (meth)acrylate, vinylether, aryether, and a combination thereof;

(B) 10 to 60 parts by weight of a monomer reactive with the urethane- based oligomer, having a reactive group selected from the group consisting of (meth)acrylate, vinylether, aryether, and a combination thereof; and

(C) 0.01 to 200 parts by weight of a silicone or fluorine containing compound, based on 100 parts of the sum of the components (A) and (B).

10. (original) The method according to claim 9, which further comprises adhering a soft or rigid backing having a curved or flat face to the bottom face of the organic mold.

11. (previously amended) A method for fabricating an organic mold, which comprises coating or casting a resin composition for the organic mold on a pattern face of a mastermold, irradiating the resin layer with an active energy ray to preliminarily cure it, pouring a UV- or heat-curable resin composition onto the cured resin layer as a backbone, heating or irradiating the resultant to completely cure the resin and the backbone layers, lifting off the organic mold having a reverse pattern face to that of the mastermold and integrally formed with the backbone layer from the mastermold, and completely curing the organic mold wherein the resin composition comprises:

(A) 40 to 90 parts by weight of an active energy curable urethane- based oligomer having a reactive group selected from the group consisting of (meth)acrylate, vinylether, aryether, and a combination thereof;

(B) 10 to 60 parts by weight of a monomer reactive with the urethane- based oligomer, having a reactive group selected from the group consisting of (meth)acrylate, vinylether, aryether, and a combination thereof;

(C) 0.01 to 200 parts by weight of a silicone or fluorine containing compound, based on 100 parts of the sum of the components (A) and (B) and

(D) 0.1 to 10 parts by weight of a photoinitiator, based on 100 parts of the sum of the components (A), (B) and (C).

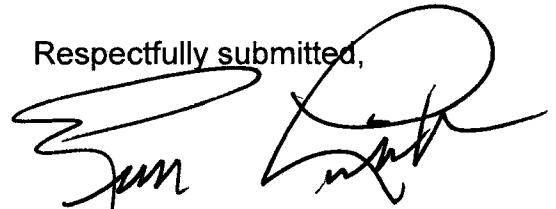
REMARKS

Claim 1 has been further amended incorporating the limitations of claim 7 which further specifies that the silicone or fluorine containing compound is at least one component selected from (a) a silicone-containing reactive monomer or oligomer of a specified group of silicone containing compounds; (b) a fluorine-containing reactive monomer or oligomer selected from a specified group of fluorine containing compounds; or (c) a combination of (a) and (b). The components of a silicone-containing reactive monomer or oligomer as identified in (i) of amended claim 1, and the components of the fluorine-containing reactive monomer or oligomer identified in (ii) of amended claim 1, are clearly not taught or suggested or even remotely implied by Audsley.

CONCLUSION

Reconsideration and allowance of amended claim 1 and dependent claims 2-6 is respectfully solicited.

Respectfully submitted,



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CERTIFICATE OF TRANSMISSION

I hereby certify that this Preliminary Amendment w/RCE is being submitted to the USPTO via EFS-Web to the Commissioner for Patents, P.O. Box 1450, Alexandria VA 22313-1450, on September 15, 2009.

By



Audrey de Souza